

(e) The side wall pressure on the cable must not exceed 1,000 pounds per foot of radius.

(f) Equipment grounding conductors in the cable must be sized in accordance with article 250-95 of the NEC. System grounding conductors must be of a cross-sectional area not less than that of the normal current carrying conductors of the cable. The metal sheath must be grounded but must not be used as a required grounding conductor.

(g) On an offshore floating drilling and production facility, the cable may be used as interconnect cable between production modules and between fixed distribution panels within the production modules, except that interconnection between production and temporary drilling packages is prohibited. Also, the cable may be used within columns, provided that the columns are not subject to the conditions described in paragraph (c) of this section.

(h) When the cable is used within a hazardous (classified) location, terminations or fittings must be listed, and must be appropriate, for the particular Type MC cable used and for the environment in which they are installed.

[CGD 94-108, 62 FR 23908, May 1, 1997]

### Subpart 111.70—Motor Circuits, Controllers, and Protection

#### § 111.70-1 General.

(a) Each motor circuit, controller, and protection must meet the requirements of ABS Rules for Building and Classing Steel Vessels, sections 4/5A5.13, 4/5B2.13, 4/5B2.15, and 4/5C4; ABS Rules for Building and Classing Mobile Offshore Drilling Units, sections 4/3.87 through 4/3.94 and 4/3.115.6; or IEC 92-301, as appropriate, except the following circuits:

(1) Each steering gear motor circuit and protection must meet part 58, subpart 58.25, of this chapter.

(2) Each propulsion motor circuit and protection must meet subpart 111.35 of this part.

(b) In ungrounded three-phase alternating current systems, only two motor-running protective devices (overload coil or heater type relay within the motor and controller) need

be used in any two ungrounded conductors, except when a wye-delta or a delta-wye transformer is used.

(c) The motor disconnecting means must be an externally operable switch or circuit breaker.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28281, June 4, 1996; 62 FR 23909, May 1, 1997]

#### § 111.70-3 Motor controllers and motor control centers.

(a) *General.* The enclosure for each motor controller or motor control center must meet NEMA No. ICS 2 and NEMA No. 2.3 1983 or meet Table 5 of IEC 92-201, as appropriate, for the location where it is installed. In addition, each enclosure in a hazardous location must meet subpart 111.105 of this part. NEMA No. 2.4 provides guidance on the differences between NEMA and IEC devices for motor service.

(b) *Low-voltage release.* Each motor controller for a fire pump, elevator, steering gear, or auxiliary that is vital to the vessel's propulsion system, except a motor controller for a vital propulsion auxiliary which can be restarted from a central control station, must have low-voltage release if automatic restart after a voltage failure or its resumption to operation is not hazardous. If automatic restart is hazardous, the motor controller must have low-voltage protection. Motor controllers for other motors must not have low-voltage release unless the starting current and the short-time sustained current of the additional low-voltage release load is within the capacity of one ship's service generator. Automatic sequential starting of low-voltage release controllers is acceptable to meet this paragraph.

(c) *Low-voltage protection.* Each motor controller must have low-voltage protection, except for the following motor controllers:

(1) A motor controller that has low-voltage release under paragraph (b) of this section.

(2) A motor controller for a motor of less than 2 horsepower (1.5 kW).

(d) *Identification of controllers.* (1) Each motor controller and motor control center must be marked externally with the following information: